<u>**AMENDMENTS TO THE CLAIMS**</u>:

Please cancel claims 1-24 and add new claims 25-39 as follows:

25. (New): A method for characterising body tissue, the method comprising obtaining at least two components of data, wherein data representing a first measured tissue property of a body tissue sample is obtained; data representing a second, different measured tissue property of the tissue sample is obtained;
using the respective data in combination as inputs to a predefined calibration model that relates the combined data to at least one tissue characteristic to provide a characterisation of the tissue sample.

26. (New): A method according to claim 25, wherein the characterisation consists of characterising the tissue sample as normal or abnormal.

27. (New): A method according to claim 25, wherein the characterisation comprises various grades of abnormality.

28. (New): A method according to claim 25, wherein the characterisation comprises tissue typing.

29. (New): A method according to claim 25, wherein the method comprises obtaining at least three components of data representing three different measured tissue properties, the obtained data being used in combination to provide the characterisation of the tissue sample.

30. (New): A method according to claim 25, wherein the method comprises obtaining at least four components of data representing four different measured tissue properties, the obtained data being used in combination to provide the characterisation of the tissue sample.

31. (New): A method according to claim 25, wherein techniques used to obtain the tissue property data include at least one of: x-ray fluorescence (XRF); energy or angular dispersive x-ray diffraction (EDXRD); Compton scatter densitometry; low angle x-ray scattering and the measurement of linear attenuation (transmission) coefficients.

32. (New): A method according to claim 25, wherein the measured tissues properties include the composition of the tissue sample.

33. (New): A method according to claim 25, wherein the method is for characterising body tissue in vitro.

34. (New): A method according to claim 33, wherein the data is obtained from tissue on which substantially no processing and/or no sample preparation has taken place between excision of the tissue and obtaining the data.

35. (New): A method for creating a tool for the characterisation of body tissue, the method comprising creating a calibration model that relates data representing at least two measurable tissue properties to at least one tissue characteristic.

36. (New):   A method according to claim 35, wherein the method comprises creating a calibration model that relates data representing at least three measurable tissue properties to at least one tissue characteristic.

37. (New):   A method according to claim 305, wherein the method comprises creating a calibration model that relates data representing at least four measurable tissue properties to at least one tissue characteristic.

38. (New):   A method according to claim 35, wherein the calibration model is produced by using sets of the measured data from tissue samples for which the or each at least one characteristic to be determined by the model is already known.

39. (New):   A method according to claim 35, which comprising the use of a predefined calibration model that relates Compton scatter data to at least one tissue characteristic.